

MAINE'S OFFICIAL LIST OF ENDANGERED AND THREATENED PLANTS

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ABSTRACT

Maine's Official List of Endangered and Threatened Plants includes 85 Endangered and 74 Threatened taxa. In addition, we have recognized three administrative categories: Special Concern (45 taxa), Special Concern—Possibly Extirpated (90 taxa) and Watch List (37 taxa). Status of a particular plant within Maine is the primary rationale for listing, regardless of frequency of occurrence and abundance outside the state. Lack of knowledge of the biology of most of Maine's rare plants precludes use of biological factors in our criteria. Listing criteria are therefore based on population number and size, with exceptions for plants that are Federally Endangered or Threatened, or with small populations, or confined to a small geographic area, or that are clearly and imminently jeopardized. These exceptions to the criteria allow us to list a plant such as *Carex oronensis*, Orono Sedge, as State Endangered, though it has more than 40 occurrences in Maine, because it is endemic to the Penobscot River drainage. Of Maine's Endangered and Threatened plants, 28 percent are concentrated in the southwestern corner of the state (York and Cumberland Counties) where many plants reach the northeastern limit of their geographical distribution; 38 percent are limited to four areas in northern and northwestern Maine—the St. John River Valley, Crystal Bog, Mt. Katahdin and Twin Peaks. The official list is informational, not regulatory, and will provide a focus for planning and education. The official and administrative lists are to be formally reviewed biennially.

Key Words: Rare, threatened, endangered plants, official list, Maine

Maine's Official List of Endangered and Threatened Plants was established according to Maine law (Title 5:3315 MRSA) on June 23, 1988. This list includes 159 native vascular plant taxa, with 85 Endangered and 74 Threatened (Table 1) representing more than 10% of the approximately 1500 native vascular plant taxa in Maine (Richards et al., 1983). The 90 taxa that are administratively categorized as Special Concern—Possibly Extirpated (Table 1) have no occurrence recorded within the past 20 years, although not all have been sought equally. Two additional administrative categories, Special Concern (45 taxa) and Watch List (37 taxa) (Table 2), are attached to the Official List.

Interest in Maine's rare flora is long-standing and currently strong (Vickery et al., 1989). Since 1973, when the Federal Endangered Species Act (Public Law 93-205) was enacted (Ayensu

Table 1. Maine's Official List of Endangered (E) and Threatened (T) Plants, and Special Concern—Possibly Extirpated (SC-PE) taxa, an administrative category.

In Status—Maine column, E = State Endangered, T = State Threatened and SC-PE = Special Concern—Possibly Extirpated. Letters in parentheses indicate exceptions to the numerical critiera: (a) = small populations; (b) = populations confined to a small geographic area; (c) = populations clearly and imminently jeopardized. In Status—Federal column, LE = Listed Endangered; 2 = listed in the Federal Register (1985), but uncertainties regarding taxonomic status or biological vulnerability need to be resolved before the taxon can be listed as Endangered or Threatened at the Federal level; 3B = species status in doubt; 3C = listed in the Federal Register although more abundant or widespread than previously believed, and/or subject to any identifiable threat. Nomenclature follows Kartesz and Kartesz (1980) except where more recent revisions are available.

Scientific Name	Common Name	Status	
		Maine	Federal
Pteridophytes			
Adiantaceae			
<i>Cryptogramma stelleri</i> (Gmel.) Prantl.	Slender Cliff-brake	T	
Aspleniaceae			
<i>Asplenium platyneuron</i> (L.) Oakes ex D.C. Eat.	Ebony Spleenwort	T	
<i>A. rhizophyllum</i> L. (<i>Camptosorus rhizophyllus</i>)	Walking Fern	SC-PE	
<i>A. viride</i> Huds.	Green Spleenwort	E	
<i>Dryopteris filix-mas</i> (L.) Schott.	Male Fern	E	
<i>Woodsia alpina</i> (Bolton) S. P. Gray	Northern Woodsia	T	
<i>W. glabella</i> R. Br.	Smooth Woodsia	T	
<i>W. obtusa</i> (Spreng.) Torr.	Blunt-lobed Woodsia	T	
<i>Woodwardia areolata</i> (L.) T. Moore	Netted Chainfern	SC-PE	
Equisetaceae			
<i>Equisetum × trachyodon</i> A. Braun (= <i>E. variegatum</i> var. <i>jespertii</i>)	Scouring Rush	SC-PE	
Lycopodiaceae			
<i>Lycopodium sabinaefolium</i> Willd.	Ground-Fir	T	
<i>L. sitchense</i> Rupr.	Sitka Clubmoss	E	
Ophioglossaceae			
<i>Botrychium lunaria</i> (L.) Sw.	Moonwort	E(a)	
Selaginellaceae			
<i>Selaginella apoda</i> (L.) Fern.	Creeping Spike-moss	E	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>S. selaginoides</i> (L.) Link	Northern Spike-moss	SC-PE	
Gymnosperms			
Cupressaceae			
<i>Chamaecyparis thyoides</i> (L.) B.S.P.	Atlantic White-Cedar	T(c)	
Angiosperms—Dicotyledons			
Apiaceae			
<i>Cryptotaenia canadensis</i> (L.) DC.	Wild Chervil	SC-PE	
<i>Osmorrhiza chilensis</i> Hook. & Arn.	Western Sweet Cicely	T	
Aquifoliaceae			
<i>Ilex glabra</i> (L.) Gray	Inkberry	E	
Araliaceae			
<i>Panax quinquefolius</i> L.	American Ginseng	T(c)	3C
Aristolochiaceae			
<i>Asarum canadense</i> L.	Wild Ginger	T(c)	
Asclepiadaceae			
<i>Asclepias tuberosa</i> L.	Butterfly-weed	E	
Asteraceae			
<i>Aster divaricatus</i> L.	White Wood Aster	T	
<i>A. dumosus</i> L.	Bush Aster	E	
<i>A. foliaceus</i> Lindl.	Leafy-bracted Aster	T	
<i>A. patens</i> Ait.	Late Purple Aster	SC-PE	
<i>A. paternus</i> Cronq.	White-topped Aster	T	
<i>A. schreberi</i> Nees	Schreber's Aster	SC-PE	
<i>A. subulatus</i> Michx.	Small Salt-marsh Aster	E	
<i>Bidens eatonii</i> Fern.	Eaton's Bur-marigold	T	
<i>B. hyperborea</i> Greene	Estuary Bur-marigold	T	
<i>Erigeron acris</i> L. var. <i>kamschat-</i> <i>kus</i> (DC.) Herder (= <i>E. angulosus</i> var. <i>k.</i>)	Fleabane	SC-PE	
<i>Eupatorium dubium</i> Willd. ex Poir.	Eastern Joe-Pye-Weed	E	
<i>E. fistulosum</i> Barratt	Trumpet-Weed	SC-PE	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>E. rotundifolium</i> L. var. <i>ovatum</i> (Bigelow) Torr. (= <i>E. pubescens</i>)	Hairy Boneset	SC-PE	
<i>Gnaphalium purpureum</i> L.	Purple Cudweed	SC-PE	
<i>G. supinum</i> L.	Alpine Cudweed	E	
<i>Hieracium gronovii</i> L.	Gronovius' Hawkweed	SC-PE	
<i>H. robinsonii</i> (Zahn) Fern.	Robinson's Hawkweed	SC-PE	
<i>H. venosum</i> L. var. <i>nudicaule</i> (Michx.) Farw.	Poor Robin's Plantain	SC-PE	
<i>Iva frutescens</i> L. var. <i>oraria</i> (Bart- lett) R.C. Jackson	Marsh-elder	T	
<i>Liatris scariosa</i> (L.) Willd. var. <i>novae-angliae</i> (Lunnell) (= <i>L.</i> <i>borealis</i> Nutt.)	Northern Blazing Star	T	
<i>Mikania scandens</i> (L.) Willd.	Climbing Hemp- weed	SC-PE	
<i>Prenanthes boottii</i> (DC.) Gray	Boott's Rattle- snake-root	T	2
<i>P. × mainensis</i> Gray	Hybrid Rattle- snake Root	SC-PE	
<i>P. nana</i> (Bigelow) Torr. (= <i>P. tri- foliolata</i> var. <i>nana</i>)	Dwarf Rattle- snake-root	E	
<i>Solidago calcicola</i> Fern.	Rock Goldenrod	SC-PE	
<i>S. ulmifolia</i> Muhl.	Elm-leaved Goldenrod	SC-PE	
<i>Tanacetum bipinnatum</i> (L.) Schultz-Bip. ssp. <i>huronense</i> (Nutt.) Breitung (= <i>T. h.</i> var. <i>johannense</i>)	Saint John Tan- sy	T(b)	
Balsaminaceae			
<i>Impatiens pallida</i> Nutt.	Yellow Jewel- weed	T	
Betulaceae			
<i>Betula glandulosa</i> Michx.	Dwarf Birch	E	
<i>B. minor</i> (Tuckerman) Fern.	Dwarf White Birch	E	
Boraginaceae			
<i>Hackelia deflexa</i> (Wahlenb.) Opiz var. <i>americana</i> (Gray) Fern. & I. M. Johnston (= <i>H. ameri- cana</i>)	American Stick- seed	E	
Brassicaceae			
<i>Arabis divaricarpa</i> A. Nels.	Purple Rock- cress	SC-PE	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>A. laevigata</i> (Muhl.) Poir.	Smooth Rock-cress	E(a)	
<i>A. missouriensis</i> Greene	Missouri Rock-cress	T	
<i>Barbarea orthoceras</i> Ledeb.	Winter-cress	SC-PE	
<i>Cardamine bellidifolia</i> L.	Bitter-cress	E	
<i>C. longii</i> Fern.	Long's Bitter-cress	T(b)	2
<i>Dentaria laciniata</i> Muhl. ex Willd.	Cut-leaved Toothwort	E	
<i>D. maxima</i> Nutt.	Great Toothwort	SC-PE	
<i>Descurainia richardsonii</i> (Sweet) O. E. Schulz	Richardson's Tansy-mustard	SC-PE	
<i>Draba arabisans</i> Michx.	Rock Whitlow-Grass	T	
<i>D. lanceolata</i>	Lance-leaved Draba	E	
Callitrichaceae			
<i>Callitricha anceps</i> Fern.	Water-Starwort	E	
Campanulaceae			
<i>Lobelia siphilitica</i> L.	Blue Cardinal Flower	SC-PE	
Caprifoliaceae			
<i>Lonicera dioica</i> L.	Mountain Honeysuckle	E(a)	
<i>L. sempervirens</i> L.	Trumpet Honey-suckle	SC-PE	
<i>Triosteum aurantiacum</i> Bickn.	Wild-Coffee	T	
Caryophyllaceae			
<i>Minuartia rubella</i> (Wahlenb.) Hiern (<i>Arenaria r.</i>)	Arctic Sandwort	E	
<i>Silene acaulis</i> (L.) Jacq. var. <i>acaulis</i> (= <i>S. a.</i> var. <i>exscapa</i>)	Moss Campion	SC-PE	
Chenopodiaceae			
<i>Chenopodium berlandieri</i> Moq. var. <i>boscianum</i> (Moq.) H. A. Wahl (= <i>C. boscianum</i>)	Bosc's Goosefoot	E	
<i>C. rubrum</i> L.	Coast-Blite	T	
<i>Salicornia virginica</i> L. (= <i>S. bigelovii</i>)	Dwarf Glasswort	E	
<i>Suaeda americana</i> (Pers.) Fern.	American Sea-blite	SC-PE	
<i>S. richii</i> Fern.	Rich's Sea-blite	E	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
Cistaceae <i>Lechea tenuifolia</i> Michx.	Slender Pinweed	SC-PE	
Clethraceae <i>Clethra alnifolia</i> L.	Sweet Pepper-bush	T(c)	
Clusiaceae <i>Hypericum pyramidatum</i> Ait.	Great St. Johns-wort	SC-PE	
Convolvulaceae <i>Calystegia spithamea</i> (L.) Pursh	Upright Bind-weed	T	
Cornaceae <i>Cornus florida</i> L.	Flowering Dogwood	E(a)	
Droseraceae <i>Drosera anglica</i> Huds. <i>D. linearis</i> Goldie	English Sundew Linear-leaf Sundew	E E	
Elaeagnaceae <i>Shepherdia canadensis</i> (L.) Nutt.	Canada Buffalo-berry	E	
Ericaceae <i>Arctostaphylos alpina</i> (L.) Spreng. <i>Cassiope hypnoides</i> (L.) D. Don <i>Loiseleuria procumbens</i> (L.) Desv. <i>Phyllodoce caerulea</i> (L.) Bab. <i>Rhododendron lapponicum</i> (L.) Wahlenb. <i>R. maximum</i> L. <i>R. viscosum</i> (L.) Torr. <i>Vaccinium boreale</i> Hall & Aalders	Alpine Bearberry Moss Plant Alpine Azalea Mountain Heath Lapland Rosebay Great Rhododendron Clammy Azalea Alpine Blueberry	T E E E E T(c) T SC-PE	
Euphorbiaceae <i>Acalypha virginica</i> L.	Three-seeded Mercury	SC-PE	
Fabaceae <i>Astragalus eucosmus</i> B.L. Robins <i>A. robbinsii</i> (Oakes) Gray var. <i>minor</i> (Hook.) Barneby <i>Baptisia tinctoria</i> (L.) R. Br. var. <i>crebra</i> Fern. <i>Lespedeza × nuttallii</i> Darl. (L. × n.)	Elegant Milk-vetch Robbin's Milk-vetch Wild Indigo Nuttall's Bush Clover	SC-PE SC-PE E SC-PE	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>L. hirta</i> (L.) Hornem.	Hairy Bush-clover	SC-PE	
<i>Lupinus perennis</i> L.	Wild Lupine	SC-PE	
<i>Oxytropis campestris</i> (L.) DC. var. <i>johannensis</i> Fern.	St. John Oxytropae	T(b)	2
Fagaceae			
<i>Quercus coccinea</i> Muenchh.	Scarlet Oak	SC-PE	
<i>Q. montana</i> Willd. (= <i>Q. prinus</i>)	Chestnut Oak	E	
Gentianaceae			
<i>Bartonia paniculata</i> (Michx.) Muhl.	Screw-stem	E	
<i>Gentiana rubricaulis</i> Schwein.	Red-stemmed Gentian	SC-PE	
<i>Gentianella amarella</i> (L.) Börner (<i>Gentiana a.</i>)	Northern Gentian	E	
<i>G. quinquefolia</i> (L.) Small	Stiff Gentian	SC-PE	
Juglandaceae			
<i>Carya cordiformis</i> (Wang) K. Koch	Bitternut Hickory	E	
Lamiaceae			
<i>Scutellaria leonardii</i> Epling	Leonard's Skullcap	SC-PE	
<i>S. parvula</i> Michx.	Small Skullcap	SC-PE	
<i>Stachys tenuifolia</i> Willd. var. <i>hispidia</i> (Pursh) Fern. (= <i>S. t.</i> var. <i>platyphylla</i>)	Thin-leaved Hedge-nettle	SC-PE	
Lentibulariaceae			
<i>Utricularia resupinata</i> B. D. Greene	Small Purple Bladderwort	T	
Onagraceae			
<i>Epilobium anagallidifolium</i> Lam. (= <i>E. alpinum</i>)	Alpine Willow-herb	T	
<i>E. ciliatum</i> Raf.	Hairy Willow-herb	T	
<i>E. hornemannii</i> Reichenb.	Hornemann's Willow-herb	T	
Papaveraceae			
<i>Adlumia fungosa</i> (Ait.) Greene ex B.S.P.	Allegheny Vine	E	
<i>Dicentra canadensis</i> (Goldie) Walp.	Squirrel-corn	T	
Platanaceae			
<i>Platanus occidentalis</i> L.	Sycamore	SC-PE	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
Polemoniaceae			
<i>Polemonium vanbruntiae</i> Britt.	Jacob's Ladder	E	
Polygalaceae			
<i>Polygala cruciata</i> L. (<i>P. c.</i> var. <i>aquilonia</i>)	Marsh Milkwort	SC-PE	
<i>P. senega</i> L.	Seneca Snake-root	T	
Polygonaceae			
<i>Polygonum douglasii</i> Greene	Douglas' Knot-weed	T	
<i>P. viviparum</i> L.	Alpine Bistort	E	
<i>Rumex occidentalis</i> S. Wats. var. <i>fenestratus</i> (Greene) Lepage (= <i>Rumex fenestratus</i>)	Dock	SC-PE	
Primulaceae			
<i>Hottonia inflata</i> Ell.	Feather-foil	SC-PE	
Ranunculaceae			
<i>Anemone multifida</i> Poir.	Cut-leaved Anemone	T(a,b)	
<i>Hepatica nobilis</i> P. Mill. var. <i>acuta</i> (Pursh) Steyermark (<i>H. acutiloba</i>)	Sharp-lobed Hepatica	SC-PE	
<i>Ranunculus ambigens</i> S. Wats.	Water-plantain	SC-PE	
	Spearwort		
<i>R. fascicularis</i> Muhl. ex Bigelow	Early Crowfoot	T	
<i>R. gmelini</i> DC.	Small Yellow	T	
	Water-Crowfoot		
<i>R. lapponicus</i> L.	Lapland Buttercup	T	
<i>Thalictrum thalictroides</i> (L.) Eames & Boivin (<i>Anemonella t.</i>)	Rue-Anemone	SC-PE	
<i>T. venulosum</i> Trel. var. <i>confine</i> (Fern.) B. Boivin (= <i>T. turneri</i> ; formerly <i>T. confine</i>)	Boundary Meadow-Rue	SC-PE	
Rhamnaceae			
<i>Ceanothus americanus</i> L.	New Jersey Tea	T(c)	
Rosaceae			
<i>Amelanchier humilis</i> Wieg.	Low Shadbush	E	
<i>Sanguisorba canadensis</i> L.	Canada Burnet	SC-PE	
<i>Spiraea septentrionalis</i> (Fern.) Love & Love (= <i>S. latifolia</i> var. <i>s.</i>)	Northern Meadowsweet	E	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>Waldsteinia fragarioides</i> (Michx.) Tratt.	Barren-Strawberry	T	
Rubiaceae			
<i>Galium obtusum</i> Bigelow	Blunt-leaved Bedstraw	SC-PE	
<i>Hedyotis purpurea</i> (L.) Torr. & Gray var. <i>calycosa</i> (Gray) Fosberg (<i>Houstonia lanceolata</i>)	Lance-leaved Bluet	SC-PE	
Salicaceae			
<i>Salix arctophila</i> Cockerell ex Heller	Arctic Willow	E	
<i>S. argyrocarpa</i> Anderss.	Silverleaf Willow	SC-PE	
<i>S. candida</i> Flugge ex Willd.	Hoary Willow	T	
<i>S. cordata</i> Michx.	Heartleaf Willow	SC-PE	
<i>S. exigua</i> Nutt. (= <i>S. interior</i> var. <i>exterior</i>)	Sandbar Willow	T	3B
<i>S. herbacea</i> L.	Dwarf Willow	E	
<i>S. pedicellaris</i> Pursh	Bog Willow	SC-PE	
<i>S. planifolia</i> Pursh	Flatleaf Willow	E	
<i>S. uva-ursi</i> Pursh	Bearberry Willow	T	
Saxifragaceae			
<i>Saxifraga foliolosa</i> R. Br. var. <i>foliolosa</i> (= <i>S. stellaris</i> var. <i>comosa</i>)	Star Saxifrage	E	
<i>S. paniculata</i> P. Mill. (= <i>S. aizoon</i> var. <i>neogaea</i>)	Livelong Saxifrage	T	
<i>S. pensylvanica</i> L.	Swamp Saxifrage	T(b,c)	
Scrophulariaceae			
<i>Agalinis neoscotica</i> (Greene) Fern.	Nova Scotia Agalinis	E	
<i>Euphrasia disjuncta</i> Fern. & Wieg.	Disjunct Eye-bright	SC-PE	
<i>E. oakesii</i> Wettst.	Oakes' Eyebright	E	
<i>Pedicularis furbishiae</i> S. Wats.	Furbish's Lousewort	E	LE
<i>Scrophularia marilandica</i> L.	Carpenter's Square	SC-PE	
<i>Veronica wormskjoldii</i> Roemer & Schultes ssp. <i>wormskjoldii</i> (= <i>V. alpina</i> var. <i>unaliaschensis</i>)	Alpine Speedwell	E	
Ulmaceae			
<i>Ulmus rubra</i> Muhl.	Slippery Elm	SC-PE	

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
Urticaceae			
<i>Parietaria pensylvanica</i> Muhl. ex Willd.	Pennsylvania Pellitory	SC-PE	
Verbenaceae			
<i>Phryma leptostachya</i> L. (formerly in Phrymaceae)	Lopseed	SC-PE	
<i>Verbena urticifolia</i> L.	White Vervain	SC-PE	
Violaceae			
<i>Viola adunca</i> Sm. var. <i>minor</i>	Violet	SC-PE	
<i>V. brittoniana</i> Pollard	Coast Violet	SC-PE	
<i>V. palustris</i> L.	Alpine Marsh Violet	E	
<i>V. triloba</i> Schwein.	Three-lobed Violet	SC-PE	
Vitaceae			
<i>Vitis aestivalis</i> Michx. (= <i>V. a.</i> var. <i>argentifolia</i>)	Summer Grape	T	
Angiosperms—Monocotyledons			
Alismaceae (Alismataceae)			
<i>Sagittaria rigida</i> Pursh	Stiff Arrowhead	E	
Cyperaceae			
<i>Carex adusta</i> Boott	Sedge	SC-PE	
<i>C. alopecoidea</i> Tuckerman	Fox-tail Sedge	E	
<i>C. atherodes</i> Spreng.	Awned Sedge	SC-PE	
<i>C. bushii</i> Mackenzie	Bush's Sedge	SC-PE	
<i>C. crassipes</i> Dewey	Crawe's Sedge	SC-PE	
<i>C. eburnea</i> Boott	Ebony Sedge	T	
<i>C. echinata</i> Murr.	Little Prickly Sedge	T	
<i>C. gynocrates</i> Wormskj. ex Dreyer	Sedge	T	
<i>C. livida</i> (Wahlenb.) Willd. var. <i>grayana</i> (Dewey) Fern.	Livid Sedge	T	
<i>C. ×mainensis</i> Porter	Sedge	SC-PE	
<i>C. media</i> R. Br.	Intermediate Sedge	E	
<i>C. oronensis</i> Fern.	Orono Sedge	E(a,b)	2
<i>C. polymorpha</i> Muhl.	Variable Sedge	T	2
<i>C. prairea</i> Dewey	Prairie Sedge	T	
<i>C. praticola</i> Rydb.	Sedge	SC-PE	
<i>C. rariflora</i> (Wahlenb.) Sm.	Loose-flowered Sedge	SC-PE	
<i>C. salina</i> Wahlenb. var. <i>kattogea-</i> <i>tensis</i> (Fries) Almquist	Salt-marsh Sedge	E	

Table 1. Continued.

Scientific Name	Common Name	Maine	Federal	Status
<i>C. saxatilis</i> L.	Russett Sedge	E		
<i>C. scirpoidea</i> Michx.	Bulrush Sedge	T		
<i>C. sparganioides</i> Willd.	Bur-Reed Sedge	E		
<i>C. sterilis</i> Willd.	Atlantic Sedge	T		
<i>C. × trichina</i> Fern.	Sedge	SC-PE		
<i>C. typhina</i> Michx.	Cat-tail Sedge	SC-PE		
<i>C. vaginata</i> Tausch	Sheathed Sedge	T		
<i>Cyperus houghtonii</i> Torr.	Houghton's Umbrella Sedge	SC-PE		
<i>Eleocharis pauciflora</i> (Lightf.) Link (= <i>E. p.</i> var. <i>fernaldii</i>)	Spike-rush	E		
<i>E. rostellata</i> (Torr.) Torr.	Beaked Spike-rush	E		
<i>E. tuberculosa</i> (Michx.) Roemer & Schultes	Long-tuberled Spike-rush	E		
<i>Hemicarpha micrantha</i> (Vahl) Britt.	Dwarf Bulrush	T		
<i>Rhynchospora capillacea</i> Torr.	Beak-Rush	E		
<i>R. macrostachya</i> Gray	Horned-rush	SC-PE		
<i>Scirpus longii</i> Fern.	Long's Bulrush	SC-PE		2
<i>S. pendulus</i> Muhl.	Pendulous Bulrush	SC-PE		
Juncaceae				
<i>Juncus alpinus</i> Vill.	Alpine Rush	T		
<i>J. oronensis</i> Fern.	Orono Rush	SC-PE		
<i>J. subtilis</i> E. Mey.	Rush	SC-PE		
<i>Luzula confusa</i> Lindeberg	Northern Wood-rush	E		
<i>L. spicata</i> (L.) DC.	Spiked Wood-rush	E		
Iridaceae				
<i>Iris prismatica</i> Pursh	Slender Blue-flag	T		
Lemnaceae				
<i>Wolffia columbiana</i> Karst.	Columbia Water-meal	T		
Liliaceae				
<i>Aletris farinosa</i> L.	Unicorn-root	SC-PE		
<i>Hypoxis hirsuta</i> (L.) Coville (formerly in Amaryllidaceae)	Stargrass	SC-PE		
<i>Streptopus × oreopolus</i> Fern.	Twisted Stalks hybrid	SC-PE		
<i>Trillium grandiflorum</i> (Michx.) Salisb.	Large-flowered Trillium	SC-PE		

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
Najadaceae			
<i>Najas guadalupensis</i> (Spreng.) Magnus	Guadalupe Naiad	SC-PE	
Orchidaceae			
<i>Amerorchis rotundifolia</i> (Banks ex Pursh) Hulten (<i>Orchis r.</i>)	Small Round-leaved Orchis	T	
<i>Corallorrhiza odontorhiza</i> (Willd.) Nutt.	Autumn Coral Root	E(a)	
<i>Cypripedium arietinum</i> R. Br.	Ram's Head Lady's Slipper	T	3C
<i>Galearis spectabilis</i> (L.) Raf. (= <i>Orchis s.</i>)	Showy Orchis	T	
<i>Goodyera oblongifolia</i> Raf.	Giant Rattle-snake-plantain	E(c)	
<i>Isotria medeoloides</i> (Pursh) Raf.	Small Whorled Pogonia	E	LE
<i>I. verticillata</i> (Muhl. ex Willd.) Raf.	Large Whorled Pogonia	E	
<i>Malaxis brachypoda</i> (Gray) Fern.	White Adder's-mouth	E	
<i>Platanthera leucophaea</i> (Nutt.) Lindl.	Prairie White-fringed Orchid	E	2
<i>Spiranthes lucida</i> (A. A. Eat.) Ames	Shining Ladies'-tresses	T(a)	
<i>Triphora trianthophora</i> (Sw.) Rydb.	Nodding Pogonia	T(b)	
Poaceae			
<i>Bromus kalmii</i> Gray	Kalm's Brome Grass	E	
<i>B. pubescens</i> Muhl. ex Willd.	Brome Grass	E	
<i>Calamagrostis cinnoides</i> (Muhl.) Bart.	Reed-Bentgrass	SC-PE	
<i>C. pickeringii</i> Gray	Reed-Bentgrass	E	
<i>C. stricta</i> (Timm) Koel. ssp. <i>inxpansa</i> (Gray) C. W. Greene (= <i>C. fernaldii</i>) (= <i>C. inxpansa</i> var. <i>novae-angliae</i>)	Reed-Bentgrass	T	
<i>C. stricta</i> (Timm) Koel. ssp. <i>stricta</i> (= <i>C. neglecta</i>)	Reed-Bentgrass	SC-PE	
<i>Deschampsia atropurpurea</i> (Wahl-enb.) Scheele	Hairgrass	E	
<i>Eragrostis capillaris</i> (L.) Nees	Lace-Grass	E	
<i>Festuca rubra</i> L. var. <i>prolifera</i>	Proliferous Red Fescue	E	
Piper			

Table 1. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>Hierochloe alpina</i> (Willd.) Roe- mer & Schultes	Alpine Holy- grass	T	
<i>Muhlenbergia sobolifera</i> (Muhl.) Trin.	Cliff Muhly Grass	E	
<i>Phleum alpinum</i> L.	Mountain Timothy	T	
<i>Poa fernaldiana</i> Nannf.	Wavy Bluegrass	E	
<i>Spartina × caespitosa</i> (A. A. Eat.) Fern.	Cord-Grass	SC-PE	
<i>Sphenopholis obtusata</i> (Michx.) Scribn.	Prairie Wedge- grass	SC-PE	
<i>Sporobolus asper</i> (Michx.) Kunth	Drop-Seed Grass	E	
<i>Trisetum melicoides</i> (Michx.) Scribn.	Purple False Oats	E	
<i>T. triflorum</i> (Bigelow) Love & Love (= <i>T. spicatum</i> var. <i>pilosiglume</i>)	Narrow False Oats	T	
Pontederiaceae			
<i>Heteranthera dubia</i> (Jacq.) MacM.	Water Stargrass	E	
Potamogetonaceae			
<i>Potamogeton confervoides</i> Rei- chenb.	Pondweed	T	
<i>P. friesii</i> Rupr.	Fries' Pondweed	E	
<i>P. pulcher</i> Tuckerman	Pondweed	T	
<i>P. vaseyi</i> J. W. Robbins	Vasey's Pond- weed	E	
Scheuchzeriaceae			
<i>Triglochin gaspense</i> Lieth & D. Love	Gaspe Arrow- grass	SC-PE	
Xyridaceae			
<i>Xyris smalliana</i> Nash	Yellow-eyed Grass	E	

and DeFilipps, 1978), there has been an increasing effort in Maine to inventory and conserve plants thought to be rare. Many individuals and two organizations in particular—first the Critical Areas Program of the Maine State Planning Office and later the Natural Heritage Program of the Maine Chapter of The Nature Conservancy—have supported herbarium and field studies (Eastman, 1978a, 1978b; Gawler, 1978, 1984; Tyler and Gawler, 1980;

Critical Areas Program, 1985b). Information on the status of Maine's rare plants is available in *Rare Vascular Plants of Maine* (Critical Areas Program, 1985a) and its 1986 Addendum (Vickery et al., 1986) and from the Maine Natural Heritage Program of the Nature Conservancy.

ESTABLISHING THE OFFICIAL LIST

In 1986 the Maine State Legislature passed an Act to Establish an Official List of Endangered and Threatened Plants (Title 5: 3315 MRSA) and directed the Critical Areas Program to establish the state's official list. An Endangered Plant Technical Advisory Committee, composed of botanists, educators, conservationists, a lawyer, and representatives from major commercial landholders prepared a draft of an official list (see Acknowledgments for names of committee members).

To obtain possible models for Maine's criteria for listing Endangered, Threatened and Special Concern—Possibly Extirpated plants, we sent a questionnaire to 48 states inquiring about their criteria. Thirty-three states responded; all had a list, though they used diverse approaches in drawing up these lists. The standardization of criteria called for by Ayensu (1981) has not been accomplished. Many states' lists follow closely the element ranking system of the Natural Heritage Program, which reflects the number of known and established occurrences for a species in a state. Other states derive their lists by incorporating quantified data with allowances made for unusual species biology. Subspecies and varieties are included by many states (but not on Maine's official list unless the subspecific taxon represents the species in Maine, or the taxon is listed in the Federal Register, or there are ten or fewer recent occurrences in Maine), and hybrids are excluded unless fertile.

Most states follow the definition of taxon categories in the Federal Register (1985) and include in their list Federally listed plant species. Federal listing covers plants that occur in the U.S.A. and are Endangered or Threatened globally. Two Federally-listed Endangered species, *Pedicularis furbishiae* (Furbish's Lousewort) and *Isotria medeoloides* (Small Whorled Pogonia), grow in Maine and are on Maine's list as State Endangered.

Almost all states that responded to our questionnaire list plants

that are Endangered or Threatened within the state even if they are not rare elsewhere. Many states (e.g., California, Idaho, Michigan, Tennessee and Wisconsin) also consider status outside the state. Others (e.g., North Carolina, Washington and Wisconsin) give priority to disjunctions according to distance from the main population. Maine's list is based on Endangered and Threatened status within the state, regardless of status outside state boundaries.

We believe that criteria used should closely correspond to legal definitions of Endangered and Threatened. In addition, they should be clear enough for the lay public to comprehend and apply. Our list is intended to reflect biological endangerment, not simply scarcity. However, it is often difficult to assess "threat" in natural systems, especially in view of the paucity of data for many rare plant species. Often the only quantifiable indicators of need for protection are number and size of populations. Hence our primary criterion is numerical—the number of documented, recent occurrences in the state and the population size. "Recent" is within 20 years, a time frame we consider workable because 50 years, which was originally proposed, would have made the Endangered list more than twice as long and not as up-to-date. Native plants formerly known from Maine but not seen within 20 years were placed in the Special Concern—Possibly Extirpated category. "Occurrence" refers to natural, indigenous existence, either as a population (a group of individuals of the same taxon growing in one place) or in a town (if there is more than one documentation from the town but best available data do not indicate more than one population). Our numerical criteria are stringent enough to avoid a list so large as to undermine its credibility or the willingness of developers, planners and landowners to cooperate in voluntary conservation.

Maine's criteria are most similar to those of Rhode Island and Wisconsin in that a single known, recent occurrence automatically qualifies a taxon as Endangered. In addition, Maine's Endangered status includes any Federally Endangered plants. Exceptions to the strictly numerical criteria allow us to accommodate certain biological realities for plants that would not otherwise be included. Such exceptions are made for taxa with more than one occurrence but with small population sizes, for populations confined to a small geographic area, or for plants clearly and imminently in jeopardy due to disease, human activity, or other causes.

Bartonia paniculata, Screwstem, is State Endangered because of only a single known, recent occurrence in Maine on a large coastal island. *Cassiope hypnoides*, *Loiseleuria procumbens*, and *Phyllodoce caerulea*, which all occur only on Mt. Katahdin in Maine, are also State Endangered. *Botrychium lunaria* is Endangered because one of its two populations in Maine totals a few individuals. *Corallorrhiza odontorhiza* and *Lonicera dioica* are also listed as Endangered because in each case the two known populations in Maine are very small, with one population consisting of fewer than 10 individuals.

These criteria also allow for unusual cases such as *Carex oronensis* (Orono Sedge), which is Federally listed as category "2," a designation for taxa that may be appropriate to list but that require further data on biological vulnerability, taxonomy and/or threats (Federal Register, 1985). *Carex oronensis* is endemic to a single watershed in Maine (Eastman, 1980) and is the only vascular plant taxon that occurs solely in Maine. An extensive survey in 1987–1988 resulted in the location of 41 occurrences of *C. oronensis*, all within the Penobscot River drainage (Dibble, unpubl. data); the taxon therefore is possibly at risk. Taxonomic status is not yet resolved for *C. oronensis*.

Threatened status parallels Endangered, except that the numerical criterion is two to four populations. Currently there are no Federally Threatened taxa in Maine. The above exceptions to Endangered status regarding population size, etc. also apply to the Threatened category. *Impatiens pallida* meets the numerical criterion, with four populations in Maine, so it receives Threatened status. *Panax quinquefolius* is Threatened despite 10 recent occurrences because it is commercially exploited. *Cypripedium reginae*, with at least 40 recent occurrences, is Threatened because of overpicking and digging from natural populations.

Maine's three administrative categories, Special Concern—Possibly Extirpated (Table 1), Special Concern and Watch List (Table 2), contain taxa that are potential additions to Endangered and Threatened categories in the future. These lists provide valuable information about rare plants in the State.

The Special Concern—Possibly Extirpated category is for plants not documented in 20 years. Many of these plants have not yet been sought diligently. *Trillium grandiflorum*, *Hepatica nobilis* var. *acuta*, *Lupinus perennis* and *Carex rariflora* have been sought through the years but not re-located. These taxa are not necessarily

Table 2. Maine's administrative lists of plants that are Special Concern (SC) and Watch List (WL).

In Status—Federal column, 2 = listed in the Federal Register (1985) but uncertainties regarding taxonomic status or biological vulnerability need to be resolved before the taxon can be listed as Federally Endangered; 3B = species status in doubt; 3C = listed in the Federal Register although more abundant or widespread than previously believed, and/or subject to any identifiable threat. Nomenclature follows Kartesz and Kartesz (1980) except where more recent revisions are available.

Scientific name	Common name	Status	
		Maine	Federal
Pteridophytes			
Adiantaceae			
<i>Adiantum pedatum</i> L. var. <i>aleuticum</i> Rupr.	Aleutian Maiden-hair Fern	WL	
Aspleniaceae			
<i>Dryopteris fragrans</i> (L.) Schott.	Fragrant Cliff-fern	SC	
<i>D. goldiana</i> (Hook.) Gray	Goldie's Fern	SC	
Equisetaceae			
<i>Equisetum variegatum</i> Schleich. ex Weber & C. Mohr	Variegated Scouring Rush	SC	
Lycopodiaceae			
<i>Lycopodium selago</i> L.	Alpine Clubmoss	SC	
Angiosperms—Dicotyledons			
Apiaceae			
<i>Lilaeopsis chinensis</i> (L.) Kuntze	Lilaeopsis	SC	
Aquifoliaceae			
<i>Ilex laevigata</i> (Pursh) Gray	Smooth Winter-berry Holly	WL	
Araceae			
<i>Peltandra virginica</i> Raf.	Arrow-Arum	SC	
Asteraceae			
<i>Arnica mollis</i> Hook.	Arnica	SC	
<i>Aster borealis</i> (Torr. & Gray) Prov. (= <i>A. junciformis</i>)	Rush Aster	SC	
<i>Erigeron hyssopifolius</i> Michx.	Hyssop-leaved Fleabane	WL	
<i>Prenanthes racemosa</i> Michx.	Racemed Rattle-snake-root	SC	
<i>Solidago canadensis</i> L. var. <i>salebrosa</i> (Piper) M. E. Jones	Goldenrod	WL	
<i>S. canadensis</i> L. var. <i>scabra</i> (Muhl.) Torr. & Gray	Goldenrod	WL	
<i>S. canadensis</i> L. var. <i>subserrata</i> (DC.) Cronq.	Goldenrod	WL	

Table 2. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>S. cutleri</i> Fern.	Cutler's Golden-rod	SC	
Betulaceae			
<i>Betula × caerulea</i> Blanch. (= <i>B. c. grandis</i>)	Blue Birch	SC	
<i>B. pumila</i> L.	Bog Birch	SC	
Brassicaceae			
<i>Subularia aquatica</i> L.	Awlwort	SC	
Caprifoliaceae			
<i>Lonicera oblongifolia</i> (Goldie) Hook.	Swamp Honey-suckle	SC	
<i>Viburnum edule</i> (Michx.) Raf.	Squashberry, Mooseberry	WL	
Caryophyllaceae			
<i>Minuartia glabra</i> (Michx.) Mattf. (= <i>Arenaria glabra</i>)	Smooth Sand-wort	WL	
<i>M. groenlandica</i> (Retz.) Ostenf. (= <i>Arenaria groenlandica</i>)	Mountain Sand-wort	WL	
<i>Paronychia argyrocoma</i> (Michx.) Nutt. (= <i>P. a. var. albimontana</i>)	White Mountain Silverling	SC	3B
<i>Sagina nodosa</i> L. Fenzl ssp. <i>borealis</i> Crow	Pearlwort	WL	
<i>S. nodosa</i> L. Fenzl ssp. <i>nodosa</i>	Pearlwort	WL	
Crassulaceae			
<i>Crassula aquatica</i> (L.) Schoenl. (= <i>Tillaea a.</i>)	Pygmyweed	SC	
Diapensiaceae			
<i>Diapensia lapponica</i> L.	Diapensia	SC	
Ericaceae			
<i>Chimaphila maculata</i> (L.) Pursh	Spotted Winter-green	SC	
<i>Kalmia latifolia</i> L.	Mountain-Laurel	WL	
<i>Pyrola asarifolia</i> Michx.	Purple Pyrola	WL	
Fabaceae			
<i>Astragalus alpinus</i> L. var. <i>brunetianus</i> Fern.	Alpine Milk-vetch	SC	
<i>Hedysarum alpinum</i> L. var. <i>alpinum</i> (= <i>H. a. var. americanum</i>)	Alpine Sweet-broom	SC	
Fagaceae			
<i>Castanea dentata</i> (Marsh.) Borkh.	American Chestnut	SC	
Gentianaceae			
<i>Gentianopsis crinita</i> (Froel.) Ma (= <i>Gentiana c.</i>)	Fringed Gentian	WL	

Table 2. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
Lauraceae			
<i>Lindera benzoin</i> (L.) Blume	Spicebush	SC	
<i>Sassafras albidum</i> (Nutt.) Nees	Sassafras	SC	
Nymphaeaceae			
<i>Nymphaea tetragona</i> Georgi	Pygmy Water Lily	SC	
Plantaginaceae			
<i>Littorella americana</i> Fern.	Littorella	SC	
Podostemaceae			
<i>Podostemon ceratophyllum</i> Michx. (= <i>Podostemum c.</i>)	Threadfoot	WL	
Portulacaceae			
<i>Montia fontana</i> L. (= <i>M. lampro-sperma</i>)	Blinks	SC	
Potamogetonaceae			
<i>Potamogeton filiformis</i> Pers.	Pondweed	SC	
Primulaceae			
<i>Primula farinosa</i> L. (= <i>P. lauren-tiana</i>)	Bird's-eye Primrose	WL	
<i>P. mistassinica</i> Michx.	Mistassini Primrose	WL	3C
	Water-pimpernel	WL	
Ranunculaceae			
<i>Clematis occidentalis</i> (Hornem.) DC. (= <i>C. verticillaris</i>)	Purple Clematis	SC	
Rosaceae			
<i>Rubus chamaemorus</i> L.	Baked-apple Berry	WL	
Rubiaceae			
<i>Hedyotis longifolia</i> (Gaertn.) Hook. (= <i>Houstonia l.</i>)	Long-leaved Bluet	WL	
Santalaceae			
<i>Geocaulon lividum</i> (Richards) Fern.	Northern Comandra	SC	
Saxifragaceae			
<i>Parnassia glauca</i> Raf.	Grass-of-Parnassus	WL	
Scrophulariaceae			
<i>Agalinis maritima</i> (Raf.) Raf.	Seaside Agalinis	WL	
<i>Castilleja septentrionalis</i> Lindl.	Northern Painted-cup	WL	

Table 2. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
<i>Limosella australis</i> R. Br. (= <i>L. subulata</i>)	Mudwort	WL	
<i>Lindernia dubia</i> (L.) Pennell var. <i>anagallidea</i> (Michx.) Cooperrieder (= <i>L. anagallidea</i>)	False Pimpernel	WL	
<i>Mimulus ringens</i> L. var. <i>copophilus</i> Fern.	Estuarine Monkey Flower	WL	2
Valerianaceae			
<i>Valeriana sitchensis</i> Bong. ssp. <i>uliginosa</i> (Torr. & Gray) F. G. Mey. (= <i>V. uliginosa</i>)	Northern Valerian	SC	3C
Violaceae			
<i>Viola novae-angliae</i> House	New England Violet	SC	2
Angiosperms—Monocotyledons			
Alismaceae (= Alismataceae)			
<i>Sagittaria calycina</i> Engelm. var. <i>spongiosa</i> Englem. (= <i>S. montevidensis</i> var. <i>s.</i>)	Arrowhead	WL	
Cyperaceae			
<i>Carex flava</i> L. var. <i>gaspensis</i> Fern.	Sedge	WL	
<i>C. hassei</i> Bailey (= <i>C. garberi</i> var. <i>bifaria</i>)	Garber's Sedge	WL	
Juncaceae			
<i>Juncus stygius</i> L. ssp. <i>americanus</i> (Buch.) Hulten	Moor Rush	SC	
<i>J. trifidus</i> L.	Rush	WL	
Iridaceae			
<i>Iris setosa</i> Pallas ex Link. var. <i>canadensis</i> M. Foster (= <i>I. hookeri</i>)	Beach-head Iris	WL	
Liliaceae			
<i>Allium canadense</i> L.	Wild Garlic	SC	
<i>A. tricoccum</i> Ait.	Wild Leek	WL	
<i>Tofieldia glutinosa</i> (Michx.) Pers.	False Asphodel	WL	
Orchidaceae			
<i>Arethusa bulbosa</i> L.	Arethusa	WL	
<i>Calypso bulbosa</i> (L.) Oakes	Fairy Slipper	WL	
<i>Listera auriculata</i> Wieg.	Auricled Tway-blade	SC	2

Table 2. Continued.

Scientific Name	Common Name	Status	
		Maine	Federal
Poaceae			
<i>Agrostis mertensii</i> Trin. (= <i>A. borealis</i>)	Boreal Bentgrass	SC	
<i>Danthonia spicata</i> (L.) Beauv. ex Roemer & Schultes var. <i>pinetorum</i> Piper	White Oat-grass	WL	
Zannichelliaceae			
<i>Zannichellia palustris</i> L.	Horned Pond-weed	SC	

"known to be extinct," but formerly known populations have not been found extant. If any of the 90 Special Concern—Possibly Extirpated plant taxa is found, it will be listed as Endangered upon approval of documentation by the Critical Areas Program.

Special Concern includes plants with five to ten occurrences, for which some threat is indicated. *Betula × caerulea*, a fertile hybrid (DeHond and Campbell, 1989), has nine recent occurrences in Maine, and is at risk because of its value for timber. The Watch List is for plant taxa with more than 10 documented recent occurrences, and for which there is reason for concern. It includes varieties or subspecies qualifying for one of the other categories but belonging to species with more than ten recent occurrences in Maine, such as *Adiantum pedatum* var. *aleuticum*, *Danthonia spicata* var. *pinetorum*, and *Mimulus ringens* var. *colpophilus*. The Special Concern—Possibly Extirpated List, Special Concern List and Watch List are reviewed at least biennially.

Only native plants growing without cultivation are listed. Fernald (1950) is the source for determination of natural and indigenous occurrence. Taxonomic status and nomenclature primarily follow Kartesz and Kartesz (1980) and recent taxonomic changes (e.g., Greene, 1984). As field verifications, monitoring programs and research proceed, revisions to the Official List and administrative lists will be made at least biennially by the Maine Critical Areas Program with the assistance of the Endangered Plant Technical Advisory Committee.

The purpose of the Official List is to give the State of Maine an authoritative notification of Endangered and Threatened Plants. This list will be used by state government to establish conser-

vation priorities, to expedite its own environmental reviews, and to distribute to land use consultants and developers conducting site evaluations and preparing environmental impact statements. In addition, the Critical Areas Program will use the list for establishing priorities in landowner contact programs, for population monitoring and for developing conservation strategies.

DISTRIBUTION AND COMPOSITION OF MAINE'S ENDANGERED AND THREATENED FLORA

The presence of southern and northern floristic elements in Maine accounts for much of the state's rare flora. On one hand, of the 159 Endangered and Threatened plants, 37 percent reach the northern limit of their range in Maine. Twenty-eight percent occur in the southwestern corner of the state (York and Cumberland Counties) where generally small peripheral or disjunct populations represent species that are usually more common further south. Examples of this southern element are *Cornus florida*, *Liatris scariosa* var. *novae-angliae* (*L. borealis*), *Rhododendron maximum*, and *Quercus montana* (*Q. prinus*) (Eastman, 1976a, 1976b; Tyler and Gawler, 1980). On the other hand, forty-two percent of the 159 Endangered and Threatened plants reach the southern limit of their range in the state. These include many arctic/alpine and boreal peatland species which are found at high elevations in Maine (May and Davis, 1978), along the northeastern coast (Worley, 1980; Olday et al., 1983), and in unusual habitats such as calcareous fens (Davis and Sawyer, 1978; Rooney et al., 1979).

Rare plant areas of major importance in Maine include Mt. Katahdin (elev. 5267 ft./1605 m) with its diverse alpine flora (Hudson, 1988), including 23 Endangered, 10 Threatened, and four Special Concern—Possibly Extirpated taxa; the St. John River valley with *Pedicularis furbishiae* and four other Endangered, six Threatened and two Special Concern—Possibly Extirpated plants (Richards, 1980; Gawler, 1983; Menges and Gawler, 1986); Crystal Bog, a rich fen in northern Maine with three Endangered, two Threatened and one Special Concern—Possibly Extirpated taxa (Davis and Sawyer, 1978; Rooney et al., 1979; Eastman, 1981); and Twin Peaks (Campbell and Eastman, 1978; Tyler and Gawler, 1980) where one Endangered and eight Threatened taxa occur.

The composition of Maine's list of Endangered and Threatened plants could be of use in unravelling some factors in plant species rarity and endangerment, such as dispersal patterns or restricted habitat (Drury, 1980). Scarcity of calcareous bedrock exposures in Maine preadapts calcicoles for rarity; one-third of Maine's Endangered and Threatened plants are calcicoles (Critical Areas Program, 1985a). The percent herbaceous (versus woody) plants is the same (82 percent) in both the combined Endangered and Threatened categories of the Official List and in Maine's total native flora (Richards et al., 1983). Seven percent are ferns and fern allies, though this group comprises only five percent of the native flora. Twenty-two percent of Maine's Endangered and Threatened plants occur in arctic/alpine habitats, and 12 percent are associated with a riverine habitat or are restricted to river valleys. Eight percent are aquatics, eight percent are peatland plants, and eight percent are salt marsh plants. Of all families in the List, the Cyperaceae contains the highest number of Endangered and Threatened species (18), with 15 species of *Carex*; this number is 10 percent of all Maine's Endangered and Threatened taxa, the same percentage as the genus represents in Maine's native flora. Other families prominently represented in the Endangered and Threatened categories of the List are the Poaceae (14 species), Asteraceae (13 species), Orchidaceae (11 species), Ericaceae (7 species), Salicaceae (6 species), and Brassicaceae (6 species).

Unlike California, where 47 percent of the native flora are endemics (Elias, 1987), Maine has only one taxon, *Carex ornensis*, not known to occur outside the State. Plant taxa found in Maine and not elsewhere in the contiguous United States are *Agalinis neoscotica*, *Oxytropis campestris* var. *johannensis*, *Pedicularis furbishiae*, *Salix arctophila* and *Saxifraga foliolosa* var. *foliolosa* (*S. stellaris* var. *comosa*). Found in Maine but not elsewhere in New England are *Drosera anglica*, *Drosera linearis*, *Epilobium anagallidifolium*, *Juncus stygius* var. *americanus*, *Mimulus ringens* var. *colpophilus*, *Platanthera (Habenaria) leucophaea*, *Ranunculus lapponicus*, *Salix exigua* (*S. interior* var. *exterior*), and *Selaginella selaginoides* (Crow et al., 1981; Crow, 1982; Critical Areas Program, 1985a).

Maine's Official List will serve as a valuable tool in conservation education, as a guide for implementing conservation programs, and as a stimulus to plant biologists to locate new occurrences or

re-locate historical occurrences of these rare plants. The Critical Areas Program notifies and corresponds with landowners if such plants are located. It is hoped that botanists throughout the northeast will examine the list of 90 Special Concern—Possibly Extirpated plants and join in the effort to re-locate in Maine such rarities as *Juncus subtilis*, *Polygala cruciata*, *Galium obtusum*, *Silene acaulis* var. *acaulis*, *Gentianella quinquefolia* and *Carex rariflora*.

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